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[LATEST VERSION]

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Earth Resources Satellite Position Paper

		Inputs Provided by
Sec I	Value of NRO satellites to DOD	DIA
	a. Photo b. SIGINT c. ELINT	
	How Sec Def uses data	
	a. Examples of production decisions	ODDR&E, S/A
	b. Examples of RDT&E decisions	ODDR&E
	Dependence on in future	
Sec II	Assessment of confrontation risk	
	-Chance of being cut off	Col Worthman
	-Treaties, U.N. position	State
	-National policy	
Sec III	Why is U.S. interested in an ERS?	
	-Gemini pictures, desire to show return on space $, V. P. interest, Woods Hole and scientific community	ODDR&E and NASA
Sec IV	How should an ERS program be done?	Col Worthman
	-Examine what is to be done - crops, prospecting, pollution, weather, science	DDR&E
	-Show which can be done better with aircraft and bilateral agreements	
	-Show cost comparison aircraft vs satellite	
	-Define where satellite makes valid contribution	

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Sect. V	- How useful is existing DOD data for an ERS Program?	Worthman DDR&E
	- How much is applicable to ERS (ARGO/PSAC) - What is involved in processing Cost, Time, Trained Manpower - Possible working arrangements	
Sect. VI	- A recommended plan for an ERS Program	
	- NASA aircraft to meet ERS needs. U. S. first, bilaterals next - Task system on reembursement basis for existing data, new data - For long term consider other options	NASA Worthman DDR&E
Sect. VII	- Recommended actions	DDR&E
	- Program definition phase for processing satellite data - central processing lab (long term needs) - Interagency NSAM for Interior, Agriculture, Commerce SACC interface? NASA interface? - NASA plans aircraft program to meet needs best met by aircraft.	

DOD Position Paper of the Earth Resources Survey Programs

BACKGROUND:

During this coming year (1968) the NASA, Department of Interior, Department of Agriculture and the Marine Council will increase their activities toward establishing an earth resources survey program involving both manned and unmanned satellites.

This increasing interest if not properly oriented and directed could jeopardize the satellite reconnaissance program of the Department of Defense. Both the proposed earth resources survey program and the DOD intelligence collection satellites employ similar orbits and on board sensors. Both would overfly sovereign states, friendly and hostile. Thus an unfavorable international reaction to the proposed earth resources survey programs will pose problems for the NRO. Certainly the DOD must be prepared to state in analytical depth their dependence on the NRO program, the impact the earth resources program would have on the NRO, and to suggest alternate approaches to more economically and effectively achieving the objectives proposed for the earth resources survey programs.

Many proponents of the earth resources program have made a basic assumption that satellite borne sensors are the preferred approach to meeting program objectives. NASA has configured large manned satellites and experiments (AAP) to see how earth resource surveys can benefit mankind. A more direct approach would be to determine the least costly means of meeting program objectives. Ground based or aircraft borne sensors must be carefully considered as alternate approaches to satellite sensors. DOD studies to date show the use of satellites would increase program costs significantly.

It is probable that the strictest enforcement of NSAM 156 will still permit sensors and pointing systems to be flown which would show intelligence data on airfields, oil storage tanks, major site construction, etc.

There seems to be only a very small chance the Sec Def and NASA Administrator could agree to stop the NASA effort on the earth resources programs using satellites or manned space stations. Since funds will be tight in FY68 and FY69, it is a good time to consider the evolution of a Presidential Policy which would direct NASA toward an earth resources survey program, aircraft oriented, which would be more economical and productive than present ERS program proposals and would not conflict with the National Intelligence Satellite Collection Programs.

This position paper will substantiate the statement that the loss to national security which could occur if an earth resources survey program causes international confromation on intelligence satellite overflights is not worth the prestige given from the most carefully thought out earth resources satellite programs.

Issue: (1) Can NASA's Earth Resources Survey Programs be resolved with the DOD without a Presidential Policy decision?

(2) How should the problem be staffed to get a resolution?

Value of NRO Satellites to DOD

Section I. This section must clearly show the dependence of the DOD on satellite intelligence over denied areas. Photographic and electronic data thus derived must be compared to intelligence data from other sources. Examples should be given of DOD development, production, deployment, and operational decisions made in the past where satellite intelligence has played a major role. The probable role of satellite intelligence in future national decisions must be clearly shown. The DOD investments in reconnaissance satellites in the past and that projected for the future should be summarized. The impact of losing this source of intelligence should be shown.

Assessment of the Confrontation Risk

Section II. This section should deal with the international implications affecting the operation of covert satellite intelligence programs and the risk of losing the capability. Events leading to the establishment of the NRO should be recounted. National policy, treaties and the U. S. position in U. N. deliberations should be explained. The impact of ERS announcements already made by Commerce on our international relations should be examined. Finally, the probable international reaction to an earth resources survey program as an announced part of our national policy should be discussed to clearly show the possible affects on the NRO.

Why is U.S. Interested in an ERS Program

Section III. A strong desire exists to show in a spectacular fashion that the technology and capability developed by the civilian space program at a cost of billions can be used to improve the lot of mankind. The earth resources survey program has received widespread attention in this regard. Spectacular achievements in planetary, lunar, and unmanned scientific earth orbital programs have led to the assumption that satellites are the way to attack problems in areas such as agriculture, forestry, geology, mining, fishing, air and water polution. Photographs by Gemini astronauts have further stimulated scientific interest in satellites for earth sciences. NASA in their summer study group at Woods Hole has encouraged scientific interest with little regard for cost or consequeness. This section should summarize government and scientific interest in satellite earth resources survey programs. A clear distinction should be made between scientific interest and national policy in the U.S. and foreign countries.

How Should an ERS Program be Done?

Section IV. A distinction needs to be drawn between earth resources survey programs per se and satellite earth resources programs. This distinction is unappealing to the NASA since it questions the contribution of the space program to such an objective. The satellite earth resources survey objectives for agriculture, forestry, mining, fishing, geology, and other areas must be examined to determine what is to be done and whether other approaches would be more effective, less costly, or both in meeting objectives. Specifically data to be obtained by satellite must be compared to data which could be obtained on the ground or by aircraft. This section should be based on available studies. It should attempt to define objectives of the earth resources survey program which can best be met with satellite borne sensors and which can best be met with other approaches. Questionable areas needing more detailed study will be defined.

How useful is Existing DOD Data for an Earth Resources Survey?

Section V. This section should discuss the use of existing data. For those phases of the earth resources survey program requiring satellite sensors the output of current reconnaissance programs should be considered. The ARGO/PSAC study can be reviewed here. Possible working arrangements should be suggested whereby the NRO can be tasked to provide specific data processed in a useable form. The cost of obtaining this data in terms of dollars, numbers of satellites, manpower and time needed to reduce the data within the current system should be estimated. This data should then be expanded to show the true cost of a satellite earth resources program where all data is obtained by satellite and reduced for scientific and engineering consumption.

A Recommended Plan for an ERS Program

Section VI. This section should outline an acceptable earth resource survey program and show how DOD could contribute to such a program. The plan should start with a program definition phase which will provide cost and performance trade offs. A near term program should be outlined based primarily on the findings in IV. (How an ERS program should be done) ? Such a near term program should make maximum use of existing aircraft. The near term program should emphasize survey of the U. S. first with lesser emphasis on foreign countries where bi-lateral agreements exist (Brazil) or are likely to be consumated. This DOD plan should use the product of the NRO appropriately when it can contribute. Provisions for tasking the NRO on a cost reembursement basis should be included.

A long range plan should be described which could be implemented when the benefits of and need for an earth resources program are demonstrated. The purpose of this section is primarily to show the many factors which should be studied in a meaningful program definition phase and to provide the direction so far as possible which should guide the instruction of national earth resources survey program along logical line consistent with the national interest.

Recommended Actions

Section VII. DOD recommendations should be developed which will

1. lead to resolution of the conflict between the reconnaissance satellite program and earth resources survey satellite proposals;

2. provide an acceptable approach to exploitation of aerospace technology applicable to earth resources for the national interest.

This section will be prepared last. However, at this time it appears necessary to consider recommendations in (1) above which could result in a Presidential decision which will not only resolve the present conflict but will also lead to the implementation of an acceptable ERS program. A NASM also appears necessary defining the national policy on earth resources survey programs and defining a single interface with the NRO. Such a point of contact could be in DOD (SACC) or NASA.

It is expected the plan developed in Sec VI will meet the requirements for recommendation (2) above.

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